Claims

[c1]

1. A system for allocating bandwidth on a network comprising:

A. one or more network nodes wherein said one or more network nodes further comprises a first processing element, a compression module, a first local network interface, and a first bandwidth adjustment module, wherein said compression module further comprises a plurality of compression parameters and said first processing element controls said bandwidth adjustment module, said first local network interface, and said compression module;

B. a data interface connected to said one or more network nodes;

C. a master node wherein said master node further comprises a second processing element, a second local network interface, and a second bandwidth adjustment module and wherein said second processing element controls said second network interface and said second bandwidth adjustment module;

D. wherein said one or more network nodes and said master node communicate using said first local network interface and said second network interface; and

E. wherein said second bandwidth adjustment module dynamically changes at least one of said compression parameters in said first bandwidth adjustment module based on network conditions on the local network wherein said network conditions are detected by said second local network interface.

[c2]

2. A system for allocating bandwidth on a network as recited in claim 1 wherein said compression parameters are parameters selected from the group consisting of compression ratios, compression types, picture quality, picture resolution, audio quality, color content and color space separation.

[c3]

3. A system for allocating bandwidth on a network as recited in claim 2 wherein types of said compression types are compression types selected from the group consisting of MJPEG, MPEG1, MPEG2, MPEG4, MPEG7, MPEG10, H.263, H.264, H.323, Windows Media Video 9 (WMv-9), wavelet compression, compression with post smoothing techniques, AC-3, DTS, AAC, G.711, G.723, G.729, GSM-AMR, Broadband GSM-AMR, and MP3.

[c4]

4. A system for allocating bandwidth on a network as recited in claim 1 wherein said network conditions are a network condition selected from the group consisting of obstructions, RF interference, changing network impedance, impedance mismatches, RF harmonics, multipath effects, various channel fading effects, network traffic volume, conducted noise, induced noise, self induced noise, friendly noise, and intermodulation products.

[c5]

5. A system for allocating bandwidth on a network as recited in claim 1 wherein said master node further comprises a decompression module for decompressing data compressed by said compression module.

[c6]

6. A system for allocating bandwidth on a network as recited in claim 1 wherein a data source is connected to said data interface and said data source is a data source selected from the group consisting of a video source, an audio source, a computer data stream, control data, and telephony data.

[c7]

7. A system for allocating bandwidth on a network as recited in claim 1 wherein a data source is connected to said data interface and wherein said data interface is a data interface selected from the group consisting of PAL composite, PAL component video, NTSC composite video, NTSC component video, S-video, serial, I²C, SPI, DVI, Digital Camera Interface, CCIR656, CCIR601, UTI656, UTI601, and Parallel.

[c8]

8. A system for allocating bandwidth on a network as recited in claim 1 wherein an attribute of a data source is controlled from said data interface wherein said attribute is selected from the group consisting of brightness, contrast, hue, white balance, saturation, luminance decimation filtering, n tap interpolation horizontal scaling, and n tap interpolation vertical scaling.

[c9]

9. A system for allocating bandwidth on a network as recited in claim 1 wherein said one or more network nodes further comprise a motion detector which detects changes in motion of said video source.

[c10]

10. A system for allocating bandwidth on a network as recited in claim 9 wherein said motion detector detects changes in motion while applying a motion mask having motion

mask parameters, wherein said motion mask parameters are selected from a group consisting of user determined, automatically learned, defined as geometric shapes, defined as non-geometric shapes, defined by regions, defined by object size, defined by object speed, defined by object micro movements, and defined by object macro movements.

[c11]

11. A system for allocating bandwidth on a network as recited in claim 1 wherein said one or more network nodes further comprise a mass storage device to store data received on said data interface based on said network conditions.

[c12]

12. A system for allocating bandwidth on a network as recited in claim 11 wherein said mass storage device is a device selected from the group consisting of a hard disk, solid state flash memory, solid state random access memory, a high capacity floppy disk, and magnetic tape.

[c13]

13. A system for allocating bandwidth on a network as recited in clam 11 wherein said mass storage device is removable.

[c14]

14. A system for allocating bandwidth on a network as recited in claim 1 wherein said one or more network nodes further comprise an encryption/decryption module for encrypting and decrypting data received on said data interface.

[c15]

15. A system for allocating bandwidth on a network as recited in claim 14 wherein said encryption/decryption module encrypts data on said local network and an external network.

[c16]

16. A system for allocating bandwidth on a network as recited in claim 1 wherein said one or more network nodes further comprise a web server for administration of said one or more network nodes.

[c17]

17. A system for allocating bandwidth on a network as recited in claim 1 wherein said one or more network nodes further comprise a remote address client for communicating with a remote address controller for remote monitoring over an external network.

[c18]

18. A system for allocating bandwidth on a network as recited in claim 1 wherein said master node further comprises a mass storage device to store data received on said data interface.

[c19]

19. A system for allocating bandwidth on a network as recited in claim 18 wherein said mass storage device is a device selected from the group consisting of a hard disk, solid state flash memory, solid state random access memory, a high capacity floppy disk, and magnetic tape.

[c20]

20. A system for allocating bandwidth on a network as recited in claim 1 wherein said master node further comprises an encryption/decryption module for decrypting data received from said data interface.

[c21]

21. A system for allocating bandwidth on a network as recited in claim 20 wherein said encryption module supports an encryption method selected from the group consisting of DES, Triple DES, AES, RC4, RC5, 56 Bit, 64 Bit, 128 Bit, and RSA.

[c22]

22. A system for allocating bandwidth on a network as recited in claim 1 wherein said master node further comprises a web server for administration of said master node.

[c23]

23. A system for allocating bandwidth on a network as recited in claim 1 wherein said master node further comprises an application program and a decompression module which decompresses the data from said compression module and data from said decompression module is used by said application program.

[c24]

24. A system for allocating bandwidth on a network as recited in claim 1 further comprising an external network connected to said master node.

[c25]

25. A system for allocating bandwidth on a network as recited in claim 24 further comprising a remote monitoring station connected to said external network wherein said remote monitor station receives data from said data interface.

[c26]

26. A system for allocating bandwidth on a network as recited in claim 24 wherein said external network is a network selected from the group consisting of the Internet, a Local Area Network (LAN), and a Wide Area Network (WAN).

[c27]

27. A system for allocating bandwidth on a network as recited in claim 1 wherein said first local network interface and said second local network interface communicate over a network selected from the group consisting of a power line network, a wireless network, an acoustic network, a wired network, and an optic network.

[c28]

28. A system for allocating bandwidth on a network as recited in claim 1 wherein said first processing element and said second processing element communicate over a network using a protocol selected from the group consisting of RTSP, RTP, RTCP, HTTP, ASF, FTP, DDNS, NTP TFTP, TCP/IP, UDP, DHCP, DNS, SMTP, HTML, LDAP, SNMP and SNTP.

[c29]

29. A system for allocating bandwidth on a network as recited in claim 1 wherein said first processing element inserts information into a data stream from said data interface

wherein said information is selected from the group consisting of a time stamp and a watermark.

[c30]

30. A system for allocating bandwidth on a network as recited in claim 1 wherein a device connected to said master node is a device selected from the group consisting of a personal computer, a telephone, an e-mail system, a monitor, and a digital video recorder.

[c31]

31. A system for allocating bandwidth on a network as recited in claim 1 wherein a signal is generated based on changes in said data stream.

[c32]

32. A system for allocating bandwidth on a network as recited in claim 31 wherein said signal is a signal selected from the group consisting of an e-mail, a text message, a voice message, a lighting control signal, a video control signal, and an audio control signal.

[c33]

33. A system for allocating bandwidth on a network as recited in claim 1 further comprising a temperature sensor connected to said local network and wherein said master node reads temperature from said temperature sensor.

[c34]

34. A system for allocating bandwidth on a network as recited in claim 1 wherein said compression parameters are controlled based on a constant network load.

[c35]

35. A system for allocating bandwidth on a network as recited in claim 1 wherein said compression parameters are controlled based on a constant media stream rate above a threshold.

[c36]

36. A system for allocating bandwidth on a network as recited in claim 1 wherein said compression parameters are controlled based on a constant media stream rate above a threshold with intermediate streaming.

[c37]

37. A system for allocating bandwidth on a network as recited in claim 1 wherein said master node is a software application running in a personal computer.

[c38]

38. A system for allocating bandwidth on a network as recited in claim 1 wherein said one or more network nodes is a software application running in a personal computer.

[c39]

39. A system for allocating bandwidth on a network comprising:

A. a first of network node wherein said first network node further comprises a first processing element, a first bandwidth adjustment module, a first local network interface, and a compression module wherein said compression module contains a plurality of compression parameters and wherein said first processing element controls said first bandwidth adjustment module, said first local network interface, and said compression module;

B. a data interface connected to said first network node;

C. a second network node wherein said second network node further comprises a second processing element, a second bandwidth adjustment module, a second local network interface, and wherein said second processing element controls said second local network interface and said second bandwidth adjustment module

D. wherein said first network node and said second network node electronically communicate using said first local network interface and said second local network interface; and

E. wherein said second bandwidth adjustment module dynamically changes at least one of said compression parameters in said first bandwidth adjustment module based on network conditions on the local network wherein said network conditions are detected by said second local network interface.

[c40]

40. A system for allocating bandwidth on a network as recited in claim 39 wherein said compression parameters are parameters selected from the group consisting of compression ratios, compression types, picture quality, picture resolution, audio quality, color content, water mark, time stamp, and color space separation.

[c41]

41. A system for allocating bandwidth on a network as recited in claim 40 wherein types of said compression types are compression types selected from the group consisting of MJPEG, MPEG1, MPEG2, MPEG4, MPEG7, MPEG10, H.263, H.264, H.323, Windows Media Video 9 (WMv-9), wavelet compression, compression with post

smoothing techniques, AC-3, DTS, AAC, G.711, G.723, G.729, GSM-AMR, Broadband GSM-AMR, and MP3.

[c42]

42. A system for allocating bandwidth on a network as recited in claim 39 wherein said network conditions are a network condition selected from the group consisting of obstructions, RF interference, changing network impedance, impedance mismatches, RF harmonics, multipath effects, various channel fading effects, network traffic volume, conducted noise, induced noise, self induced noise, friendly noise, and intermodulation products.

[c43]

43. A system for allocating bandwidth on a network as recited in claim 39 wherein said first or second network node further comprises a decompression module for decompressing data compressed by said compression module.

[c44]

44. A system for allocating bandwidth on a network as recited in claim 39 wherein a data source is connected to said data interface and said data source is a data source selected from the group consisting of a video source, an audio source, a computer data stream, control data, and telephony data.

[c45]

45. A system for allocating bandwidth on a network as recited in claim 39 wherein a data source is connected to said data interface and wherein said data interface is a data interface selected from the group consisting of PAL composite, PAL component video, NTSC composite video, NTSC component video, S-video, serial, I^2C, SPI, DVI, Digital Camera Interface, CCIR656, CCIR601, UTI656, UTI601, and Parallel.

[c46]

46. A system for allocating bandwidth on a network as recited in claim 39 wherein an attribute of a data source is controlled from said data interface wherein said attribute is selected from the group consisting of brightness, contrast, hue, white balance, saturation, luminance decimation filtering, n tap interpolation horizontal scaling, and n tap interpolation vertical scaling.

[c47]

47. A system for allocating bandwidth on a network as recited in claim 39 wherein said first or second network nodes further comprise a motion detector which detects changes in motion of said video source.

[c48]

48. A system for allocating bandwidth on a network as recited in claim 47 wherein said motion detector detects changes in motion while applying a motion mask wherein the mask parameters are selected from a group consisting of user determined, automatically learned, defined as geometric shapes, defined as non-geometric shapes, defined by regions, defined by object size, defined by object speed, defined by object micro movements, and defined by object macro movements.

[c49]

49. A system for allocating bandwidth on a network as recited in claim 39 wherein said first or second network nodes further comprise a mass storage device to store data received on said data interface based on said network conditions.

[c50]

50. A system for allocating bandwidth on a network as recited in claim 49 wherein said mass storage device is a device selected from the group consisting of a hard disk, solid state flash memory, solid state random access memory, a high capacity floppy disk, and magnetic tape.

[c51]

51. A system for allocating bandwidth on a network as recited in clam 49 wherein said mass storage device is removable.

[c52]

52. A system for allocating bandwidth on a network as recited in claim 39 wherein said first or second network nodes further comprise an encryption/decryption module for encrypting and decrypting data received on said data interface.

[c53]

53. A system for allocating bandwidth on a network as recited in claim 52 wherein said encryption/decryption module encrypts data on said local network and an external network.

[c54]

54. A system for allocating bandwidth on a network as recited in claim 39 wherein said first or second network nodes further comprise a web server for administration of said one or more network nodes.

[c55]

55. A system for allocating bandwidth on a network as recited in claim 39 wherein said first or second network nodes further comprise a remote address client for communicating with a remote address controller for remote monitoring over an external network.

[c56]

56. A system for allocating bandwidth on a network as recited in claim 39 wherein said first or second network node further comprises an encryption/decryption module for decrypting data received from said data interface.

[c57]

57. A system for allocating bandwidth on a network as recited in claim 56 wherein said encryption module supports an encryption method selected from the group consisting of DES, Triple DES, AES, RC4, RC5, 56 Bit, 64 Bit, 128 Bit, and RSA.

[c58]

58. A system for allocating bandwidth on a network as recited in claim 39 wherein said first or second network node further comprises an application program and a decompression module which decompresses the data from said compression module and data from said decompression module is used by said application program.

[c59]

59. A system for allocating bandwidth on a network as recited in claim 39 further comprising an external network connected to said first or second network node.

[c60]

60. A system for allocating bandwidth on a network as recited in claim 59 further comprising a remote monitor station connected to said external network wherein said remote monitor station receives data from said data interface.

[c61]

61. A system for allocating bandwidth on a network as recited in claim 59 wherein said external network is a network selected from the group consisting of the Internet, a Local Area Network (LAN), and a Wide Area Network (WAN).

[c62]

62. A system for allocating bandwidth on a network as recited in claim 39 wherein said first local network interface and said second local network interface communicate over a network selected from the group consisting of a power line network, a wireless network, an acoustic network, a wired network, and an optic network.

[c63]

63. A system for allocating bandwidth on a network as recited in claim 39 wherein said first processing element and said second processing element communicate over a network using a protocol selected from the group consisting of RTSP, RTP, RTCP, HTTP,

ASF, FTP, DDNS, NTP TFTP, TCP/IP, UDP, DHCP, DNS, SMTP, HTML, LDAP, SNMP and SNTP.

[c64]

64. A system for allocating bandwidth on a network as recited in claim 39 wherein said first processing element inserts information into a data stream from said data interface wherein said information is selected from the group consisting of a time stamp and a watermark.

[c65]

65. A system for allocating bandwidth on a network as recited in claim 39 wherein a device connected to said master node is a device selected from the group consisting of a personal computer, a telephone, an e-mail system, a monitor, and a digital video recorder.

[c66]

66. A system for allocating bandwidth on a network as recited in claim 39 wherein a signal is generated based on changes in said data stream.

[c67]

67. A system for allocating bandwidth on a network as recited in claim 66 wherein said a signal is an a signal selected from the group consisting of an e-mail, a text message, a voice message, a lighting control signal, a video control signal, and an audio control signal.

[c68]

68. A system for allocating bandwidth on a network as recited in claim 39 further comprising a temperature sensor connected to said local network and wherein said master node reads temperature from said temperature sensor.

[c69]

69. A system for allocating bandwidth on a network as recited in claim 39 wherein said compression parameters are controlled based on a constant network load.

[c70]

70. A system for allocating bandwidth on a network as recited in claim 39 wherein said compression parameters are controlled based on a constant media stream rate above a threshold.

[c71]

71. A system for allocating bandwidth on a network as recited in claim 39 wherein said compression parameters are controlled based on a constant media stream rate above a threshold with intermediate streaming.

[c72]

72. A system for allocating bandwidth on a network as recited in claim 39 wherein said master node is a software application running in a personal computer.

[c73]

73. A system for allocating bandwidth on a network as recited in claim 39 wherein said one or more network nodes is a software application running in a personal computer.

[c74]

74. A data address controller system comprising:

A. one or more network nodes wherein said one or more network nodes further comprises a processing element, a compression module, a local network interface, a remote address client, and a bandwidth adjustment module, wherein said compression module contains a plurality of compression parameters and said processing element controls said bandwidth adjustment module, said local network interface, and said compression module;

B. a data interface connected to said one or more network nodes;

C. an address controller connected to said one or more network nodes over a network; and

D. wherein authentication is granted to said address controller and wherein said address controller connects to said remote access client which allows said access to data received on said data interface.

[c75]

75. A data address controller system as recited in claim 74 wherein said address controller further comprises a database for storing authentication information.

[c76]

76. A data address controller system as recited in claim 74 wherein said address controller further comprises a transaction service and a database for storing transaction information.

[c77]

77. A data address controller system as recited in claim 74 wherein said address controller further comprises a subscription service and a database for storing subscription information.

[c78]

78. A method for allocating bandwidth on a network comprising the steps of:

A. receiving data on a data interface on a network node which comprises a first bandwidth adjustment module, a first local network interface, and a compression module with a plurality of compression parameters;

B. sampling network conditions from a second local network interface with a second bandwidth adjustment module in a master node;

C. determining the bandwidth requirements for data received on said data interface based on said network conditions in said second bandwidth adjustment module; and

D. notifying said first bandwidth adjustment module of said bandwidth requirements which causes said network node to change said compression parameters for said received data.

[c79]

79. A method for allocating bandwidth on a network as recited in claim 78 wherein said compression parameters are compression parameters selected from the group consisting of compression ratios, compression types, picture quality, picture resolution, audio quality, color content, water mark, time stamp, and color space separation.

[c80]

80. A method for allocating bandwidth on a network as recited in claim 79 wherein said compression types are compression types selected from the group consisting of MJPEG, MPEG1, MPEG2, MPEG4, MPEG7, MPEG10, H.263, H.264, H.323, Windows Media Video 9 (WMv-9), wavelet compression, compression with post smoothing techniques, AC-3, DTS, AAC, G.711, G.723, G.729, GSM-AMR, Broadband GSM-AMR, and MP3.

[c81]

81. A method for allocating bandwidth on a network as recited in claim 78 wherein said network conditions are a network condition selected from the group consisting of obstructions, RF interference, changing network impedance, impedance mismatches, RF harmonics, multipath effects, various channel fading effects, network traffic volume, conducted noise, induced noise, self induced noise, friendly noise, and intermodulation products.

[c82]

82. A method for allocating bandwidth on a network as recited in claim 78 wherein said master node further comprises a decompression module for decompressing data compressed by said compression module.

[c83]

83. A method for allocating bandwidth on a network as recited in claim 78 wherein a data source is connected to said data interface and said data source is a data source selected from the group consisting of a video source, an audio source, a computer data stream, control data, and telephony data.

[c84]

84. A method for allocating bandwidth on a network as recited in claim 78 wherein a data source is connected to said data interface and wherein said data interface is a data interface selected from the group consisting of PAL composite, PAL component video, NTSC composite video, NTSC component video, S-video, serial, I^2C, SPI, DVI, Digital Camera Interface, CCIR656, CCIR601, UTI656, UTI601, and Parallel.

[c85]

85. A method for allocating bandwidth on a network as recited in claim 78 wherein an attribute of a data source is controlled from said data interface wherein said attribute is

selected from the group consisting of brightness, contrast, hue, white balance, saturation, luminance decimation filtering, n tap interpolation horizontal scaling, and n tap interpolation vertical scaling.

[c86]

86. A method for allocating bandwidth on a network as recited in claim 78 wherein said network node further comprise a motion detector which detects changes in motion of said video source.

[c87]

87. A method for allocating bandwidth on a network as recited in claim 86 wherein said motion detector detects changes in motion while applying a motion mask wherein the mask parameters are selected from a group consisting of user determined, automatically learned, defined as geometric shapes, defined as non-geometric shapes, defined by regions, defined by object size, defined by object speed, defined by object micro movements, and defined by object macro movements.

[c88]

88. A method for allocating bandwidth on a network as recited in claim 78 wherein said network node further comprise a mass storage device to store data received from said data interface based on said network conditions on said local network.

[c89]

89. A method for allocating bandwidth on a network as recited in claim 88 wherein said mass storage device is a device selected from the group consisting of a hard disk, solid state flash memory, solid state random access memory, a high capacity floppy disk, and magnetic tape.

[c90]

90. A method for allocating bandwidth on a network as recited in clam 88 wherein said mass storage device is removable.

[c91]

91. A method for allocating bandwidth on a network as recited in claim 78 wherein said network node further comprises an encryption/decryption module for encrypting and decrypting data received from said data interface.

[c92]

92. A method for allocating bandwidth on a network as recited in claim 91 wherein said encryption/decryption module encrypts data on said local network and an external network.

[c93]

93. A method for allocating bandwidth on a network as recited in claim 78 wherein said network node further comprises a web server for administration of said network node.

[c94]

94. A method for allocating bandwidth on a network as recited in claim 78 wherein said network node further comprises a remote address client for communicating with remote address controller for remote monitoring over an external network.

[c95]

95. A method for allocating bandwidth on a network as recited in claim 78 wherein said master node further comprises a mass storage device to store data received from said data interface.

[c96]

96. A method for allocating bandwidth on a network as recited in claim 95 wherein said mass storage device is a device selected from the group consisting of a hard disk, solid state flash memory, solid state random access memory, a high capacity floppy disk, and magnetic tape.

[c97]

97. A method for allocating bandwidth on a network as recited in claim 78 wherein said master node further comprises an encryption/decryption module for decrypting data received from said data interface.

[c98]

98. A method for allocating bandwidth on a network as recited in claim 99 wherein said encryption module supports an encryption method selected from the group consisting of DES, Triple DES, AES, RC4, RC5, 56 Bit, 64 Bit, 128 Bit, and RSA.

[c99]

99. A method for allocating bandwidth on a network as recited in claim 78 wherein said master node further comprises a web server for administration of said master node.

[c100]

100. A method for allocating bandwidth on a network as recited in claim 78 wherein said master node further comprises an application program and a decompression module which decompresses the data from said compression module and data from said decompression module is used by said application program.

[c101]

101. A method for allocating bandwidth on a network as recited in claim 78 further comprising an external network connected to said master node.

[c102]

102. A method for allocating bandwidth on a network as recited in claim 101 further comprising a remote monitor station connected to said external network wherein said remote monitor station receives data from said data interface.

[c103]

103. A method for allocating bandwidth on a network as recited in claim 101 wherein said external network is a network selected from the group consisting of the Internet, a Local Area Network (LAN), and a Wide Area Network (WAN).

[c104]

104. A method for allocating bandwidth on a network as recited in claim 78 wherein said first local network interface and said second local network interface communicate over a network selected from the group consisting of a power line network, a wireless network, an acoustic network, a wired network, and an optic network.

[c105]

105. A method for allocating bandwidth on a network as recited in claim 78 wherein said first processing element and said second processing element communicate over a network using a protocol selected from the group consisting of RTSP, RTP, RTCP, HTTP, ASF, FTP, DDNS, NTP TFTP, TCP/IP, UDP, DHCP, DNS, SMTP, HTML, LDAP, SNMP and SNTP.

[c106]

106. A method for allocating bandwidth on a network as recited in claim 78 wherein said first processing element inserts information into a data stream from said data interface wherein said information is selected from the group consisting of a time stamp and a watermark.

[c107]

107. A method for allocating bandwidth on a network as recited in claim 78 wherein a device connected to said master node is a device selected from the group consisting of a personal computer, a telephone, an e-mail system, a monitor, and a digital video recorder.

[c108]

108. A method for allocating bandwidth on a network as recited in claim 78 wherein a signal is generated based on changes in the data received on said data interface.

[c109]

109. A method for allocating bandwidth on a network as recited in claim 108 wherein said a signal is an a signal selected from the group consisting of an e-mail, a text message, a voice message, a lighting control signal, a video control signal, and an audio control signal.

[c110]

110. A method for allocating bandwidth on a network as recited in claim 78 further comprising a temperature sensor connected to said local network and wherein said master node reads temperature from said temperature sensor.

[c111]

111. A method for allocating bandwidth on a network as recited in claim 78 wherein said compression parameters are controlled based on a constant network load.

[c112]

112. A method for allocating bandwidth on a network as recited in claim 78 wherein said compression parameters are controlled based on a constant media stream rate above a threshold.

[c113]

113. A method for allocating bandwidth on a network as recited in claim 78 wherein said compression parameters are controlled based on a constant media stream rate above a threshold with intermediate streaming.

[c114]

114. A method for allocating bandwidth on a network comprising:

A. receiving data on a data interface on a first network node which comprises a first bandwidth adjustment module, a first local network interface, and a compression module with a plurality of compression parameters;

B. sampling network conditions from a second local network interface with a second bandwidth adjustment module in a second network node;

C. determining the bandwidth requirements for data received on said data interface based on said network conditions in said second bandwidth adjustment module; and

D. notifying said first bandwidth adjustment module of said bandwidth requirements which causes said first network node to change said compression parameters for said received data.

[c115]

115. A method for allocating bandwidth on a network as recited in claim 114 wherein said compression parameters are compression parameters selected from the group consisting of compression ratios, compression types, picture quality, picture resolution, audio quality, color content, water mark, time stamp, and color space separation.

[c116]

116. A method for allocating bandwidth on a network as recited in claim 115 wherein said compression types are compression types selected from the group consisting of MJPEG, MPEG1, MPEG2, MPEG4, MPEG7, MPEG10, H.263, H.264, H.323, Windows Media Video 9 (WMv-9), wavelet compression, compression with post smoothing techniques, AC-3, DTS, AAC, G.711, G.723, G.729, GSM-AMR, Broadband GSM-AMR, and MP3.

[c117]

117. A method for allocating bandwidth on a network as recited in claim 114 wherein said network conditions are a network condition selected from the group consisting of obstructions, RF interference, changing network impedance, impedance mismatches, RF harmonics, multipath effects, various channel fading effects, network traffic volume, conducted noise, induced noise, self induced noise, friendly noise, and intermodulation products.

[c118]

118. A method for allocating bandwidth on a network as recited in claim 114 wherein said first or second network nodes further comprises a decompression module for decompressing data compressed by said compression module.

[c119]

119. A method for allocating bandwidth on a network as recited in claim 114 wherein a data source is connected to said data interface and said data source is a data source selected from the group consisting of a video source, an audio source, a computer data stream, control data, and telephony data.

[c120]

120. A method for allocating bandwidth on a network as recited in claim 114 wherein a data source is connected to said data interface and wherein said data interface is a data interface selected from the group consisting of PAL composite, PAL component video, NTSC composite video, NTSC component video, S-video, serial, I^2C, SPI, DVI, Digital Camera Interface, CCIR656, CCIR601, UTI656, UTI601, and Parallel.

[c121]

121. A method for allocating bandwidth on a network as recited in claim 114 wherein an attribute of a data source is controlled from said data interface wherein said attribute is selected from the group consisting of brightness, contrast, hue, white balance, saturation, luminance decimation filtering, n tap interpolation horizontal scaling, and n tap interpolation vertical scaling.

[c122]

122. A method for allocating bandwidth on a network as recited in claim 114 wherein said first or second network node further comprise a motion detector which detects changes in motion of said video source.

[c123]

123. A method for allocating bandwidth on a network as recited in claim 122 wherein said motion detector detects changes in motion while applying a motion mask wherein the mask parameters are selected from a group consisting of user determined, automatically learned, defined as geometric shapes, defined as non-geometric shapes, defined by regions, defined by object size, defined by object speed, defined by object micro movements, and defined by object macro movements.

[c124]

124. A method for allocating bandwidth on a network as recited in claim 114 wherein said first or second network node further comprise a mass storage device to store data received from said data interface based on said network conditions on said local network.

[c125]

125. A method for allocating bandwidth on a network as recited in claim 124 wherein said mass storage device is a device selected from the group consisting of a hard disk, solid state flash memory, solid state random access memory, a high capacity floppy disk, and magnetic tape.

[c126]

126. A method for allocating bandwidth on a network as recited in clam 124 wherein said mass storage device is removable.

[c127]

127. A method for allocating bandwidth on a network as recited in claim 114 wherein said first or second network node further comprises an encryption/decryption module for encrypting and decrypting data received from said data interface.

[c128]

128. A method for allocating bandwidth on a network as recited in claim 114 wherein said encryption/decryption module encrypts data on said local network and an external network.

[c129]

129. A method for allocating bandwidth on a network as recited in claim 114 wherein said encryption module supports an encryption method selected from the group consisting of DES, Triple DES, AES, RC4, RC5, 56 Bit, 64 Bit, 128 Bit, and RSA.

[c130]

130. A method for allocating bandwidth on a network as recited in claim 114 wherein said first or second network node further comprises a web server for administration of said network node.

[c131]

131. A method for allocating bandwidth on a network as recited in claim 114 wherein said first or second network node further comprises a remote address client for communicating with remote address controller for remote monitoring over an external network.

[c132]

132. A method for allocating bandwidth on a network as recited in claim 114 wherein said first or second network node further comprises an application program and a decompression module which decompresses the data from said compression module and data from said decompression module is used by said application program.

[c133]

133. A method for allocating bandwidth on a network as recited in claim 114 further comprising an external network connected to said master node.

[c134]

134. A method for allocating bandwidth on a network as recited in claim 133 further comprising a remote monitor station connected to said external network wherein said remote monitor station receives data from said data interface.

[c135]

135. A method for allocating bandwidth on a network as recited in claim 133 wherein said external network is a network selected from the group consisting of the Internet, a Local Area Network (LAN), and a Wide Area Network (WAN).

[c136]

136. A method for allocating bandwidth on a network as recited in claim 114 wherein said first local network interface and said second local network interface communicate over a network selected from the group consisting of a power line network, a wireless network, an acoustic network, a wired network, and an optic network.

[c137]

137. A method for allocating bandwidth on a network as recited in claim 114 wherein a device connected to said first or second network node is a device selected from the group consisting of a personal computer, a telephone, an e-mail system, a monitor, and a digital video recorder.

[c138]

138. A method for allocating bandwidth on a network as recited in claim 114 wherein a signal is generated based on changes in the data received on said data interface.

[c139]

139. A method for allocating bandwidth on a network as recited in claim 138 wherein said a signal is an a signal selected from the group consisting of an e-mail, a text message, a voice message, a lighting control signal, a video control signal, and an audio control signal.

[c140]

140. A method for allocating bandwidth on a network as recited in claim 114 further comprising a temperature sensor connected to said local network and wherein said master node reads temperature from said temperature sensor.

[c141]

141. A method for allocating bandwidth on a network as recited in claim 114 wherein said compression parameters are controlled based on a constant network load.

[c142]

142. A method for allocating bandwidth on a network as recited in claim 114 wherein said compression parameters are controlled based on a constant media stream rate above a threshold.

[c143]

143. A method for allocating bandwidth on a network as recited in claim 114 wherein said compression parameters are controlled based on a constant media stream rate above a threshold with intermediate streaming.

[c144]

144. A data address controller method comprising the steps of:

A. receiving data on a data interface on network node which comprises a bandwidth adjustment module, a network interface, and a remote access client;

B. authenticating to an address controller;

C. connecting said remote access client to said address controller over a network; and

D. providing access to data received on said data interface over said network.

[c145]

145. A data address controller method as recited in claim 144 wherein said address controller further comprises a database for storing authentication information.

[c146]

146. A data address controller method as recited in claim 144 wherein said address controller further comprises a transaction service and a database for storing transaction information.

[c147]

147. A data address controller method as recited in claim 144 wherein said address controller further comprises a subscription service and a database for storing subscription information.